



Application No. 10/625,872  
Amendment dated October 19, 2006  
Reply to Office Action of November 19, 2005

Docket No.: 0020-5157P

### AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for inducing differentiation of mammalian embryonic stem cells into functioning insulin-producing cells, which comprises the steps of:
  - 1)(A) culturing the mammalian embryonic stem cells together with feeder cells with a medium comprising leukemia inhibitory factor;
  - 2)(B) culturing the cells obtained from step 1)(A) in absence of feeder cells with a medium comprising leukemia Inhibitory factor and basic FGF in a suspension culture condition to give embryonic embryoid bodies;
  - 3)(C) culturing the obtained embryonic bodies with a selection-expanding medium; and
  - 4)(D) culturing the cells obtained eell clusters from step (C) with a differentiation medium to give functioning insulin producing cells.
2. (Currently Amended) The method of claim 1, wherein the medium used in step 2)(B) comprises about 100-10000 U/ml of leukemia inhibitory factor.
3. (Currently Amended) The method of claim 1, wherein the medium used in step 2)(B) comprises about 2-100 ng/ml of bFGF.
4. (Currently Amended) The method of claim 1, wherein the medium used in step 3)(C) comprises nicotinamide, insulin and fibronectine in a serum-free cell culture medium.
5. (Currently Amended) The method of claim 1, wherein the functioning insulin producing cells are insulin producing pancreatic islet-like cell clusters.

6. (Currently Amended) The method of claim 5 wherein the medium used in step 4)(D) comprises nicotinamide, insulin and laminin in a serum-free cell culture medium.

7. (Withdrawn) The method of claim 1, wherein the functioning cells are nerve-like cells.

8. (Withdrawn - Currently Amended) The method of claim 7, wherein the medium used in step 4)(D) comprises L-lysine, insulin and laminin in a serum-free cell culture medium.

9. (Currently Amended) Functioning The insulin producing cells induced from mammalian ES cells by the method of claim 1.

10. (Currently Amended) Insulin The insulin secreting cell clusters induced from mammalian ES cells by the method of claim 5.

11. (Withdrawn) Nerve-like cells induced from mammalian ES cells by the method of claim 7.

12-13. (Cancelled)

14. (Withdrawn) A method for treating a mammalian patient having disorders in nerve function, which comprises implanting nerve-like cells induced from allogenic ES cells by the method of claim 7 to the patient.